They are greatly under the influence of emotion, and of sympathetic or synergic action through the spinal centre. We have only to observe the effect of derangement of the stomach, or of eroded viscera, on the action of the heart, the skin, &c., in connexion with experiment, to arrive at this conclusion.

The experiments to which I allude are the following:—Let the head be removed in a frog, the spinal marrow remaining, and the circulation be ready to fail: if we now crush the stomach or a limb with a hammer, the action of the heart ceases. Let the conditions be the same in another frog, with the addition that the spinal marrow is also removed: in this case, no influence is perceived, on crushing a limb or the stomach, on the action of the heart. Now, the difference is the presence or absence of the spinal centre. This experiment, however, requires careful repetition.

Now, gentlemen, I think I may hope that you have a sound knowledge of the spinal system, as far as it extends; for it is founded on experiments which your own eyes have seen, and which I think you will not forget.

As in the present lecture I have brought before you the Anatomy and Physiology of that system, I propose, to-morrow, to treat of its Pathology.

You will, if I am not mistaken, find your knowledge of the spinal system the key to the diagnosis of the diseases of the nervous system. It is to these, in some degree, what the *Stethoscope* is to diseases of the heart and lung, the administration of a new kind of knowledge being as that of a new mode of observation; and if to know the disease is *not* half the cure, it *is* the whole of the treatment.

To-morrow evening, then, I propose to discuss the subject of *the Diseases of the Spinal System.*

XAVIER BICHAT:

HIS LIFE AND LABOURS.

A Biographical and Philosophical Study.

By R. KNOX, M.D.

My professional studies and pursuits, and especially my avocation as a lecturer on anatomy, brought at least annually before me the consideration of the "true relation of anatomy to medicine and surgery." On the other hand, the study of comparative anatomy, embryology, and the transcendental, was from my earliest years the favourite and engrossing object of all my private studies, and led me necessarily to deeply consider, and if possible to discover, the relation of anatomy to philosophy and to science. Latterly, the exterior of man seemed to me worthy of a separate and distinct study. Its delineation forms the grand object of the divine arts of painting and sculpture; its study must have a basis in the anatomy of that form, the exterior of which art alone delineates. This led me to pursue earnestly the study of the relations of the interior to the exterior of living beings, and more especially of man himself. As my inquiries proceeded, I found that artists themselves, and especially the divine Leonardo, had instinctively, and by force of genius, solved the problem by their works; but they had explained nothing in writing: and this consideration, together with others more fully set forth in my work entitled "Great Artists and Great Anatomists,"* led me to review in that work the true relations of anatomy to philosophy, science, and art. A part of my task remained, which I now endeavour to complete: it is, to establish the true relation of anatomy to the practical arts of medicine and surgery—arts which, though moving in a humble sphere, and in no way entitled to the name of sciences, are yet eminently useful to mankind, whatever statisticians and geometricians may affirm to the contrary. To establish the true relation, then, of descriptive anatomy to medicine and surgery, is the object of the following Memoir.

The history of anatomy, as applied to medicine and surgery, is wrapt up in the life and labours of one man. That man was Xavier Bichat. Preceded by the laborious and truth-seeking Haller; by Winslow, Du Verney, Morgagni, and Santorini; Malpighi, Fabrini, the teacher of Harvey; by Harvey himself; Albinus, Ruyisch, Vieussens, Vesalius; the contemporary of a greater than all; it was yet left for one man of later times to place human anatomy on its true basis — to discover the descriptive, the general, the surgical; to bestow an intelligible, systematic form on that knowledge which, ere he wrote and laboured, was disjointed, fragmentary, and all but worthless.

To appreciate justly the vast merits of this profound genius, we must consider first—What is anatomy and what its object? How it stood before the times of Bichat, and how since? What were and what are the views which the public, as well as the professional mind, had adopted in respect of it? Let us carefully distinguish the philosophical from the practical, the theoretical from the empirical, true generalization from mere truism. But first, of the man himself.

Marie François Xavier Bichat was born in 1771, at Thoirette, in Bresse, now called the department of the Jura. His father was a physician and mayor of Poncin, in Bugez; but he had property at Thoirette, where Bichat happened to be born.* He was the eldest son of Jean Baptiste Bichat and of Marie Rose Bichat. Intended for the practice of medicine, his education was, according to the method usually followed in England, the reverse of what usually prevails in France. He acquired that first which most think should come last—practice before what is usually called theory, but what in reality merely means a scientific education; for practical medicine is not, nor ever was, based on theory. Be it so; but on this point, as on most others, two views are maintained, each having reasons in its favour. To be taught the application of drugs and instruments for the relief of medical and surgical disease before being taught the anatomy of the frame and its physiology, such as it is; its chemistry, its pathology, that mortifying record of well-intended efforts, seems at first sight empiricism to the last degree. And so it is, in a sense. It might be said of the medical man taught after this fashion, that he remains, and must remain, empirical for life. Were such education as universal as it was a few years ago throughout England, medicine must have remained stationary for ages. Many people think that this is exactly what has happened; but, though admitting that centuries pass on, and medicine makes no clear and undoubted progress—that medicine, in fact, has scarcely a literature deserving the name—still let us hope that it is not absolutely stationary. But be this as it may, with the purely practical man, the man who knows nothing of science, nothing of the frame, it becomes self-evident that the trade he exercises is not a profession. Reduced to a series of formulas and prescriptions, he observes certain signs, certain appearances, and acts accordingly, irrespective of the connexion of these symptoms with the organs themselves.

On the other hand, a highly theoretical, systematic education has this defect in it: first, as regards disease, it describes that which the student has never seen; second, it is apt to lead him from practical pursuits to the purely scientific, unfitting him thereby for the great drama of life. To use a homely phrase, this kind of education is likened by some to placing the cart before the horse—a plan which succeeds perfectly in England.

Bichat's education, then, was at first practical—ought we not rather to say empirical?—that is, his father taught him the application of drugs and instruments before he had been taught a knowledge of the human frame. But neither this false step—for such I think it is—nor any other, could arrest in its grand career a genius of the highest stamp. To bring him in contact with other minds was simply to enable him rapidly to overtake and to outstrip all other men. Like every great man, he speedily left each master far behind, learning rapidly all he could teach him, turning over the knowledge so acquired in his own mind, and reproducing it under forms till then unknown. From his earliest years he saw the truth face to face, without the interposition of that hazy veil obscuring her true form from ordinary minds.

Bichat, I have said, was born in 1771. He commenced his studies at Lyons, and it was there he first studied anatomy. I can well imagine what difficulties he must have encountered; he began his career near the termination of a declining era, which, as regarded his pursuits, it was his destiny to close for ever. The anatomy of man, and, indeed, of all animals, at the period I speak of, was a hap-hazard sort of study, fragmentary, at times minute and complex, at times coarse and contemptible. Such I saw it in 1810 in Edinburgh; such I found it still in 1814-15 in the metropolis; and such it still was in 1825, when I delivered my first course of lectures "On Descriptive Anatomy." Nobody seemed rightly to understand what descriptive anatomy meant; the general anatomy of man was unknown.† There were in the metropolis but two great schools. In one of these the course began with hernia and the fasciæ, and ended with hernia and the fasciæ. The lecturer read the descriptions of the muscles from Fyfe's wretched

* Great Artists and Great Anatomists: a Biographical and Philosophical Study. Van Voorst.

* Buisson.

† See my work, Great Artists and Great Anatomists. Van Voorst, 1852.

work. At the other, a man of high genius,* affecting to despise descriptive anatomy, which his natural indolence and the spirit of his age and country prevented him mastering, talked of the abdominal muscles as so many steaks, which he buffoon-like tossed over each other, when dissected, counting them as steak first, steak second, steak third, muscles and tendons which the first of descriptive anatomists have failed clearly to describe. Yet Bichat had lived—nay, more, he had written his great works, the "Traité sur les Membranes," the "Anatomie Générale," the "Anatomie Descriptive;" but Napoleon had sealed continental Europe against England, and French works were rare. Still Bichat's works had crept into Britain. I saw them early in 1811-12, and, comparing them with the school books and school methods of the age, I felt that a man had appeared whose destiny it was to bring to a close the era of his youth and of mine, substituting for it other thoughts, other terms, and other views.

In Bichat's early youth, surgery was in the ascendant. J. L. Petit, De la Peyronie, Morand, Frère Come, distinguished men, led the schools, and gave the tone of the day. Sydenham and Boerhaave were about to be forgotten for ever. Dessault, the successor of the great surgeons just mentioned, the Dupuytren of his day, led all minds towards surgery. The times, moreover, conduced to this. The integrity of France was assailed by the hereditary dynasties of Europe, who found in England, or rather in its Government, what it was then and what it is now, the never-failing "conservator of hereditary despotisms." The war spirit of the most warlike race on earth was roused and brought into action. Republican France desired repose, peace; England's Government refused both. And England — grasping, avaricious, war-seeking England—would have granted to France of 1798 what she refused to France of 1748, because, having neither colonies nor fleets to seize, France had nothing which made it worth England's while to prolong the war. But she could not, for now all men within the sea-girt isle of Britain instinctively felt that a life and death struggle approached with the man who had already conquered at Arcoli, Lodi, and Austerlitz.

The imbecile dynasties of Hapsburgh, and Brunswick, and Hohenzollern discovered too late their terrible error. They fancied that republican France would continue to employ the insufferable dull-headed idiots who, in the fat and drowsy times of peace, fill all offices of trust and profit under a well-conducted model hereditary dynasty! But the revolution had relieved France of the soul-destroying influence of a hereditary dynasty —the most odious incubus which ever pressed on man—and thus placed at the disposal of the Government an amount of genius, talent, and ability unequalled, unapproached, at any period, saving one, of human history.

In the early days of this stormy period, Bichat was still at Lyons, but after the siege he was obliged to leave for Paris. Politically marked out, already he felt only safe in the capital, where, attaching himself to the practice of the celebrated Dessault, he proposed qualifying himself as a surgeon, his intention being to join the army, and to remain as quiet as possible. Chance ruled otherwise. The ninth thermidor arrived and restored confidence; Bichât took courage; the republic one and indivisible was now in the grasp of a dictator, who suffered genius to thrive merely because he required it; order prevailed everywhere; the nation of *sabreurs, par excellence*, had Europe now before them as a battle-field; the fortunes of nations hung upon a battle. Bichat instinctively turned to science. Chance again favoured him. Dessault's mode of teaching required certain students to reduce his oral lecture to an extract; this extract was read next day; the student on whom devolved the duty was absent, and Bichat supplied his place; the subject happened to be the treatment of fracture of the clavicle, and Dessault's bandage. The reading of Bichat's extract, or abstract, caused the strongest sensation in the class; the purity and expression of style, the clearness of ideas, the scrupulous exactness of the *resumé*, stamped it as the work of a genius and a master. He was evidently nature's professor. Dessault informed of the circumstances by Manoury, sent immediately for the young Bichat, offered him a home, and henceforward treated him as a son. These were republican times; no impediment lay in the way; France had shaken from off her shoulders "the old man of the sea," the soul-crushing, hereditary dynasty; the path was open for genius; Cuvier was in the field; Napoleon was soon to be First Consul; and France presented an amount of talent unparalleled in the history of man. This talent, the immediate product of the revolution, lay ready for employment. Under a model dynasty, and under a pure despotism no such amount of talent could have been brought forth in twice ten thousand years. Napoleon found it prepared to his hand; he employed it to enslave the world.

As Bichat was born in 1771, he must have been about twenty-two years of age when he became first known to Dessault. Located in Dessault's house, his genius expanded and grasped at everything. He now read extensively and deeply, thinking still deeper; assisted Dessault in composing his lectures; and the facility with which he acquired and imparted knowledge is spoken of by his contemporaries as something prodigious. Dessault died suddenly, on the 1st of June, 1795; Bichat, thrown on his own resources, did not despair. In 1797, he gave his first course of anatomy; it seems to have been merely a course of demonstrations—a private course no doubt—delivered to a few private students. During the course he experimented on living animals, a practice I never could witness, and have always held in extreme abhorrence; it was not by this that he acquired an immortal reputation. Unconsciously he had entered on a new path; he had commenced the era of facts against hypotheses; his demonstrations, of which in all probability he thought but little, constituted a new era in the history of medicine. He simply taught facts. It is as if he said, let your *elementary knowledge* be precise, clear, undisputed, and indisputable; if your anatomy be confused, your physiology must partake of the same character; and, as to "your pathology, read Bonetus, Lieutand, Morgagni, and Ruyisch, and say what are the conclusions to be drawn therefrom?" And, had he lived now, to the labours of these ingenious and laborious men he might have added the "Morbid Anatomy" of Baillie, and the "Pathological Anatomy" of Cruveilhier. "You have brought to a conclusion," I said to my esteemed friend, M. Cruveilhier, "your great work on Pathological Anatomy." Alas!

There is a period of life when most men call in question the powers of physic. This scepticism extends from Napoleon to the merest boor. It occurs when the mind is in its highest vigour; at a period when nothing is acceptable but *facts;* no theories listened to but the geometrical; all things doubted which admit not of direct proof. It is the age when men doubt the liquefaction of the blood of St. Januarius, but not the reign of Napoleon Buonaparte. The period I speak of ranges from thirty to fifty. At this period, physic has no hold of the mind; surgery, mechanical surgery, anatomy, positive and obvious, alone have sway. That Bichat, so young, should have leaned to surgery and anatomy arose not, however, from his years, but from fate or destiny—that is, chance, which rules all living things, uncontrollable chance, setting at defiance all human calculations. Chance willed it that he lived at the commencement of the French Revolution—that mighty event which for a time promised to restore to mankind those rights, the "*rights of men*," filched from them by fraud and violence. For ages and ages the dominancy of the crozier and the sword, church and state, had held the human mind in a state of the most pitiable thraldom. In Europe, continental and insular, liberty had not a spot to rest on. In no country, not even in Russia, were the rights of men so thoroughly trodden down at that period as in England. The French Revolution promised to restore the rights of men.

Bichat, without being conscious of it, was the child of this Revolution. But for it an obscure, ignoble destiny awaited him. The dynasty of France, like every other dynasty, prudently rejected all bold-thinking men—men of genius and action. "We want *good men*," said the miserable imbecile, Ferdinand of Austria, to the illustrious Scarpa, "not *great men*." The same language was, and is, that of all dynastic governments. Based on fraud or on violence, they seek for support by crushing the mind of the nation. Not so Republican France! Menaced by the despots of Europe, she felt that genius alone could save her. The nation responded to the call, and a mass of intelligence appeared at once which throws into the shade the genius and ability of every other age.

Republican France, which produced Arago, Cuvier, Malus, Geoffroy, La Place, and Sévigny, also produced Bichat. That their career was unchecked by Napoleon was an accidental chapter in his history; for, like all despots, he hated genius and despised the rights of men; but he required their aid to consolidate that empire, to establish that central power, which chance and his own mighty genius had placed in his hands.

It was natural for a gigantic mind like that of Bichat to pass rapidly through the infantile and juvenile states of intellectuality, described by M. Comte so happily and so simply as "the theological and metaphysical conditions of mental existence." He scarcely seems to have been aware of those deep oceans of error in which so many men and nations and races have wandered, and been shipwrecked. His

* Mr. Abernethy.

mind shot at once into "the positive," the real, and the absolute; for we find that already in 1797, when only twenty-six, he gave his first course of demonstrations. In 1799, he published the "Traité sur les Membranes," which first introduced him to Europe; and although it has been objected to Bichat that Bonn in Germany; Carmichael, Smith, and the Hunters, in England; Pinel, in his own country, France, had anticipated him in the announcement of the primitive idea, both as regards the serous membranes and the cellular tissue, it may yet be safely asserted that the "Traité sur les Membranes," viewed in conjunction with the "Anatomie Générale" —a term difficult of translation — placed anatomy in an entirely different point of view, and formed an era in medicine. Admitted that the view thus taken, which seemed for a moment to rescue medicine from pure empiricism, and to give to it a rational form, proved ultimately defective, ultimately a failure; that it explained neither diseases nor their treatment; that it shed no light on the animal sympathies; that it left biology nearly where it was,—yet was it a powerful generalization in the right direction, a step as great as that of Harvey, equally necessary to be known, equally unproductive in practical results.

The "Traité sur les Membranes," of which the "Anatomie Générale" is but the extension, was followed by the celebrated attempt to determine experimentally the essential conditions of human life. This he attempted in the brief essay, "Sur la Vie et la Mort," published in 1799. At that time he was twenty-eight, a fact incredible were it not quite certain. Unknown to each other, as if they had lived at different epochs and in different lands, Cuvier—the immortal Cuvier—was labouring at the Jardin des Plantes. Cuvier had already discovered the value to zoology of the new element, descriptive anatomy, and was applying it to the history of the earth. Bichat discovered that in point of fact it had never been applied to man. Retracing his steps, as it were, he might be supposed to have thus reasoned, if genius ever reasons, which is doubtful:—"For thousands and thousands of years physicians have conjectured, guessed, and theorized; surgeons have operated; physiologists have idly dreamed, respecting the operations in health and disease, of organs not yet properly described—not completely understood; what must that medicine be so exercised? It has been described by Celsus; he calls it empiricism. What must that surgery be so carried on? A hap-hazard, brutal art, which ought to have been long ago suppressed."

It was by the force of genius, instinctive, profound, that, arriving at certain generalizations, he formed a new era—the era of facts: he taught the scientific world to speak and think as he did. If he did not succeed in laying a true basis for biology, it must be remembered that the laws of life transcend, in seeming complexity at least, the laws of inert matter; in living bodies all is mystery—their origin, persistence, extinction. He failed where Hunter failed; he attempted *physiologie positive*, but it would not do. Is Cuvier's merit the less that he could not explain the successive zoologies which have appeared on the globe but by the clumsy interposition of a succession of miracles? But Bichat's merit does not lie here; in anatomy he formed a new era; in the descriptive he gave men "the method;" prior to him the anatomy of tissue did not exist. His brain was a mine of new ideas; every fact he turned to account. He was also much better read than many suppose; yet it has been said that his evenings were passed in senseless debauchery. Devoted to positive knowledge, he attempted a course of operations on the anatomical subject with tolerable success, mustering a class of some eighty students. Haller had done the same, that is, had delivered lectures on operative surgery before operating on the human body. But I cannot find that Bichat ever operated on the living body.

Scarcely had he completed his "Anatomie Générale," when we find him deeply engaged in the "Anatomie Descriptive;" the third volume touched a close when, accidentally slipping down on the stairs of the hospital, as he was proceeding to examine some pathological preparations in all states of decay, he fell; the nervous system was shaken; fever succeeded, superadded to a spitting of blood, to which he had been for some time subject, terminating the career of one of France's greatest men. Thus died one of the children of the Revolution; one of that bright constellation which, as yet, forms the grandest era in man's career on earth, always excepting the era of ancient Greece. Gradually they become extinct, disappearing from the field of science, their place marked by a void which none can fill. La Place, Cuvier, Geoffroy, Arago, Malus, Sévigny, Gay Lussac, De Blainville, all are gone.

The incurable Bourbons succeeded the mighty Napoleon, and with "the dynasty" dynastic views succeeded. "We don't want great men," was the cry again; "we want slaves and beasts of burthen; supple courtiers, notable only for utter want of principle and ability." Gradually the men of the Revolution became extinct; now it is the reign of the *Sabreurs, simple et pur*. That it will be brilliant need not be doubted; that it will hold a distinguished place in history is at least probable.

Chance willed that the Ossemens Fossiles and the visitation of Napoleon the Great should be cotemporaneous; between them there is no necessary connexion. The *grand Ouvrage sur l'Egypte* belongs to the same category; they redeem the reign of Napoleon, and posterity may even fancy them in some way connected with each other. I have shown in what that consists. Posterity will class the reign of the Sabreur who now rules in France, with Timour Beg and Zenghis Khan.

In private life, Bichat was most amiable, patient, generous, at all times accessible, frank, and candid. His death happened on the 3rd thermidor of the year 10. Napoleon was then First Consul. The lamentations of the School of Medicine for the death of Bichat reached the ears of the mighty warrior. By an official letter of the 14th of the same month, he ordered a bust of Bichat to be placed in the Hôtel Dieu, (of which Bichat was physician,) to the left of the vestibule.

Yet there must, if I recollect rightly, be also a bust or painting of the great man in the reception-room of the Faculty of Medicine, where I first met Béclard. This was in 1820–21. Glancing at the bust or painting, Béclard remarked to me, "that man never performed the experiments given under his name." I was shocked and deeply grieved at human nature. Thanking him for his kindness and politeness to me, I withdrew from the hall of the Faculty, resolving not to return. The idol I worshipped had been too rudely treated, and men do not readily forget injuries to their feelings. I saw it all at a glance. Béclard was about to publish, or had published, a work "On General Anatomy," compiled from Meckel. By this he hoped (vain hope!) to blot from the memories of men, the "Traité sur les Membranes," the "Essai sur la Vie et la Mort."

Nothing is more common, even for contemporaries, to mistake the claims of great men to the distinction accorded them by the world. I have already shown in the work already quoted,* that in France, in the Institute itself, it is still the fashion to talk of Cuvier as a great naturalist; he who discovered and applied to the living and fossil world the grand element of descriptive anatomy, *which none had done before;* he, the great anatomist, who first made men acquainted, through the animal kingdom, with the structure of the globe, is classed, I believe intentionally and maliciously, with the dabblers in the "Histoire Naturelle;" with the men who count the primary feathers on the wing of a bird; the scales or head of a reptile—and call it science!

As with Cuvier so with Bichat. He is known, in this country at least, and perhaps even in France, as the author of an ingenious treatise on the "Membranes applied mainly to Man;" others connect his name with the "Essai sur la Vie et la Mort;" others again, as the distinguished Comte, whilst admitting him to be the founder of a new era in science, view him as an unsuccessful inquirer into the laws of biology, which, from preconceived views, he did not look for in general physics, where M. Comte thinks they are to be found. But of his grand claim as the discoverer of the descriptive anatomy of man they seem ignorant. On this, though not on this alone, rests his great fame. With his "Anatomie Descriptive" closed the era of anatomical monographs, of the Santorinis, De Graafs, Hallers, Ruyischs, Winslows, Hunters. The method met with most opposition in England, and in Holland amongst a race no less remarkable for methodical action, and *im*methodical writing, as for the false estimate they form of the characters of other races and nations. "Your Bichat," said Sandifort to a French *savant*, "will in a few years eclipse our Boerhaave." Such an idea could come only from a Dutchman, for never were two persons more opposed in character than Boerhaave and Bichat.

With Bichat ended the immethodical teaching of anatomy. I introduced his method into Britain; but the immethodical still lingers in England, under the pretence of its being practical! Yes, practical! Works on anatomy, descriptive anatomy, still appear, commencing with the microscopic history of the tissues, and terminating with the method of operating for strangulated hernia and with lithotomy! I have even seen the title of a work "On the Descriptive and Physiological Anatomy of the Nerves of the Neck!" Were the Continent again closed to England, I should not be at all surprised to see the *good old plan* again in the ascendant. But be this as it may, wherever true science exists the names of Cuvier and Bichat will always be revered. He had the mis-

* Great Artists and Great Anatomists. Van Voorst.

fortune, like Hunter, to be classed with medical men—his writings to be confounded with medical writings; but their works were as strictly scientific as were those of Euclid and of Newton. Like all other men, he had his theories: one is remarkable, in so much that in the form of his own head was found its complete refutation. He fancied that, in accurate thinkers the brain, and, as a consequence, the skull, must be symmetrical. His own, as was proved after his death, was remarkably oblique, and the very reverse of symmetrical: obliquity of head implying obliquity of vision neither bodily nor mentally. In early life he ought to have abandoned the sterile field of medicine, and cultivated pure science.

The relative reputations of these two great men may be measured by the degree of universality to which their discoveries led. That of Cuvier spoke to mankind: it was Bichat's fate and misfortune to limit his researches to one animal—that animal, it is true, was man, great and all-powerful only in his own conceit. To the study of man alone Bichat devoted his genius and the labours of his life. The art of medicine he hoped to improve. Alas! his works, like those of Hunter, have ceased to be read by those for whom he wrote; but his name and the influence of his discoveries and views will remain for ever.

Conclusion.—The true descriptive method of anatomy was first discovered and applied to human structure by Bichat. Its relation to zoological science is direct—to medicine, as a science, indirect, exercising scarcely any influence over medicine as an art. Mechanical or operative surgery is based upon it. With physiology it has a few direct relations; but the greater number are indirect, vague, and of no account. Without it, the art of medicine would lose its best claim to be ranked as a profession; but it has not advanced it much, and probably never will. The springs of the action constituting life cannot be displayed by the scalpel and forceps: by its means we discover the effects of disease only, not diseases themselves. The nature of healthy or physiological action being entirely unknown, so also must be that of the pathological. Still more obscure are the effects of medicaments. In vain attempts to discover these relations were the lives of Bichat and of Hunter passed. Cuvier more fortunately applied the same element of research simply to science—to zoology—and so acquired immortal renown.

DELIRIUM TREMENS TREATED WITHOUT OPIUM.

By E. L. DIXON, Esq., M.R.C.S. Eng.

In the treatment of delirium tremens, when the disorder is pure and uncomplicated, the use of opium has generally been considered to be of prime importance, indeed it has been thought an essential. But I observe that of late the administration of tartar emetic, in moderate doses, and without opium, has been ably advocated by Dr. Peddie. Now the object of this communication is to put forward a mode of treatment relying for success simply upon supporting diet of an unstimulating nature. I was led to adopt this method, which I have found succeed beyond my anticipations, in consequence of having had occasion to see one or two fatal cases, treated by full doses of opium, which presented all the symptoms of narcotic poisoning. Indeed, for some years past I have been in the habit of treating all my cases, which have been numerous, in this way, and with an equally satisfactory result, the duration of them being tolerably equal. Of the last of them I subjoin a short account.

A tall, robust quarryman, aged thirty-eight, had been making use of intoxicating liquors of various kinds in great excess for seven weeks, when, (October 10th, 1854,) from causes over which he had no control, he was at once deprived of them. On the morning of the 12th he was first observed to be delirious, and when I saw him at nine A.M. I found him tremulous, very talkative, and labouring under ocular illusions, being particularly distressed about some little fishes crawling up his legs. His skin was warm and perspiring; the tongue coated with a moist whity-brown fur; appetite good; bowels confined. Pulse 100, soft and full. There was no headache, heat of scalp, or injection of the conjunctivæ.

Two strong men were ordered to remain constantly with him, to prevent him injuring himself or others. His diet to consist of beef-tea, strong broths, with tea and bread and butter. To have also a dose of common aperient mixture.

October 13th.—He has been very restless and talkative during the night, and this morning the tremulousness is increased. Skin bathed in a profuse perspiration of a disagreeable odour; pulse 102, soft and full. Tongue coated with a fur of a brown colour, exhibiting a tendency to dryness; has taken all his allowance of food; the bowels have not been opened. Repeat the aperient.

14th.—The delirium during the past night has been of a more violent character, but now (nine A.M.) he is very tranquil, and appears exhausted, and oppressed with sleepiness. Tongue moist, and coated with a dirty-white fur; appetite continues good; pulse 100; the bowels have been opened once by the medicine.

15th.—Nine A.M.: He fell asleep yesterday at 11 A.M., slept three hours, awoke, slept again for an hour, and since one o'clock this morning has been asleep with trifling intermissions. Has no illusions, but is in a condition of bewilderment. Tremor; skin moist; pulse 85, soft and full.

16th.—Yesterday slept an hour during the day, and all last night. Is perfectly rational, but the tremulousness is very great. He walks in a manner very similar to that of one under the influence of the exciting cause of his disorder. Pulse quiet; tongue somewhat coated; bowels open once yesterday.

17th.—Slept well last night, and is less tremulous this morning; tongue cleaning; appetite voracious; bowels confined; pulse quiet. Repeat the aperient; to have a chop.

19th.—Tremulousness subsided; is rapidly gaining strength; tongue almost clean; appetite good; bowels open.

In contrast with the above, I place an epitome of a case I attended some time ago, in conjunction with another medical man, and in which opium was, I think, fairly tried.

On the evening of August the 10th, 1854, I saw a tradesman of this town, who was recovering from an epileptic paroxysm, the occurrence of which, by-the-bye, I may remark I have frequently observed at the commencement of an attack of delirium tremens. I found that for some time previously he had been in the habit of drinking very freely, although he had never been intoxicated. During the whole of that day he had been in bed, and had vomited very frequently, the ejections containing bile; his bowels were open, but not purged. He was in a very tremulous condition, and mentally rather confused. An opiate draught was ordered to be taken directly, and an effervescing mixture every two hours.

He slept little during the night, and the next morning he was found to be labouring under a decided attack of delirium tremens. He was ordered to take fifteen minims of Battley's sedative solution every four hours, the diet to consist of strong broth; one or two persons to remain constantly with him, and the room to be darkened.

Although the opiate was continued without intermission, and a draught, with a grain of morphia, administered for two or three nights, he continued in the same state of busy delirium for five whole days, when he fell asleep, and awoke comparatively well.

Though, perhaps, it is scarcely fair to compare any two cases of a disease such as this, yet the circumstances of these, irrespective of their medical treatment, were as nearly similar as possible; and from their respective duration we see that the method of treatment without opium was the more advantageous, sleep being induced much more rapidly, and certainly it is less homicidal. In other diseases, however, the non-employment of a patent remedy may be equally culpable with its administration when not required.

To conclude, I consider that the chief indication in the treatment of delirium tremens is, to support the patient by plain and nutritious unstimulating food, until the brain has been restored to its normal state of nutrition, and the natural eliminative powers have removed from the system the poison producing the disorder. And such is the confidence I have in the treatment without opium, that I may say I consider those cases treated successfully with it get better in spite of it, and not by its assistance.

Preston, November, 1854.

Increase of Births.—154,735 births were registered throughout England in the quarter ending September 30th. This number, which exceeds by 7154 the number of births in the summer quarter of 1853, is the largest number ever registered in the summer quarter, and allowing for increase of population, the rate of births, 3·294 per cent. per annum, exceeds the average (3·179). The chief increase of births has been in the counties of Essex, Suffolk, Norfolk, Wilts, Somerset, Stafford, Worcester, Lincoln, Durham, Northumberland, Monmouthshire, and South Wales. As 113,939 persons died in the summer quarter, the natural increase of population in the quarter was 40,796. The increase of population is below the average.—*Quarterly Report of the Registrar-General.*